



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,270	04/14/2004	James Thomas Doyle	100-19410 (P05247-D01)	6195
33402	7590	06/29/2005	EXAMINER	
LAW OFFICES OF MARK C. PICKERING			TRAN, LONG K	
P.O. BOX 300			ART UNIT	
PETALUMA, CA 94953			PAPER NUMBER	

2818

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/824,270

Applicant(s)

DOYLE ET AL.

Examiner

Long K. Tran

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25, 26 and 28 - 45 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25, 26 and 28 - 38 is/are allowed.
- 6) ☒ Claim(s) 39 - 43 is/are rejected.
- 7) ☒ Claim(s) 45 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

1. This office action is in response to Amendment filed on April 11, 2005.
2. Claims **1 – 24** and **27** have been cancelled.
3. Claims **25, 29, 32, 34** and **35** have been amended.
4. Claims **59 – 45** have been added.
5. Claims **25, 26** and **28 – 45** are presented for examination.

Information Disclosure Statement

6. This office acknowledges receipt of the following items from the Applicant:
Information Disclosure Statement (IDS) filed December 28, 2004.
Information disclosed and listed on PTO 1449 was considered.

Drawings

7. The drawings are objected to because the drawing figures 6A, 7A and 8A needed to delete some solid lines and add broken lines for clearly identify the boundaries of the metal trace, gate, source and drain regions. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief

Art Unit: 2818

description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Art Unit: 2818

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims **39, 40, 41** and **42** are rejected under 35 U.S.C. 102(b) as being anticipated by Mahant-Shetti (US Patent no. 5,793,068).

10. Regarding claim **39**, Mahant-Shetti, '068, shows a MOS transistor formed in a semiconductor material of first conductivity type (column 4, lines 30+), the MOS transistor comprising:

A plurality of source strips of second conductivity type formed in the semiconductor material (contacts 20, 20', 20" and 20''' (figure 1; column 2, lines 2 – 5 and column 6, lines 8 – 9) connect the source);

A plurality of drain strips of second conductivity type formed in the semiconductor material (contacts 21, 21', 21" and 21''' (figure 1; column 2, lines 2 – 5 and column 6,

Art Unit: 2818

lines 8 – 9) connect the drain) such that a drain strip lies between adjacent pairs of source strips (figure 1);

A plurality of channel strips located between the source and drain strips such that a channel strips is located between each adjacent source and drain strip (abstract); and

A plurality of gate strips 35 – 42 (figure 1) formed over the channel strips between source strips and drain strips, the plurality of gate strips being isolated from the plurality of channel strips, each gate strip having a serpentine shape. Note the '068 does not show the gate strips over the channel strips. However, it is known in the semiconductor art that the channel is under the gate and between source and drain as shown by Glenn (US Patent no. 4,462,041; figure 2). Therefore, it is inherent that the channel strips are under the gate strips.

Regarding claim 40, the '068 shows the odd gate strips have a first serpentine shape and even gate strips have second serpentine shape, the second serpentine shape being an inverse of the first serpentine shape (figure 1).

Regarding claim 41, the '068 shows a peak of the first serpentine shape substantially corresponds with a valley of the second serpentine shape measured a long a line normal to a length of the gate strips (figure 1).

Regarding claim 42, the '068 shows adjacent gate strips are arranged so that: a source strip has a width that alternates between a wider region and a narrower region along a length; and
a drain strip has a width that alternates between a wider region and a narrower region along a length (figure 1)3.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim **43** is rejected under 35 U.S.C. 103(a) as being unpatentable over Mahant-Shetti (US Patent no. 5,793,068) in view of Glenn (US Patent no. 4,462,041; figure 2).

13. Regarding claim **43**, the '068 shows the claimed invention of claims 39, 40, 41 and 42 and a plurality of first contacts 20s (figure 1) makes electrical connections with the source strip, the first contacts being connected to the wider regions of the source strip; and a plurality of second contacts 21s (figure 1) makes electrical connections with the drain strip, the second contacts being connected to the wider regions of the drain strip as cited in the present claim.

The '068 not explicitly show a layer of isolation material that contacts the semiconductor material, the source strip, and the drain strip.

However, Glenn, in '041, shows an isolation material 40 and 26 (figure 2; column 3, lines 12 - 17) contacting the semiconductor material, the source strip, and the drain strip.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the device of Mahant-Shetti with the isolation material that contacts the semiconductor material, the source strip, and the drain strip of Glenn, in order to isolate the source metal strip from the drain metal strip.

Allowable Subject Matter

14. Claims **25**, **26** and **28 – 38** are allowed.

15. The following is an examiner's statement of reasons for allowance: Claims **25**, **26** and **28 – 38** are allowable over the prior art of record because none of the prior art whether taken singularly or in combination, especially when these limitations are considered within the specific combination claimed, to teach:

a Plurality of source strips having a first edge an opposing second edge having a distance W4 between a first point located at the first edge to a corresponding third point located at the second edge; and a distance W3 between a second point located at the first edge to a corresponding fourth point located at the second edge; wherein the w3 is less than the W4; and among other limitations cited in the independent claim 25.

16. Claims **44** and **45** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is an examiner's statement of reasons for the indication of allowable subject matter: Claims **44** and **45** are allowable over the prior art of record because none of the prior art whether taken singularly or in combination, especially when these limitations are considered within the specific combination claimed, to teach:

A single source metal region covering more than 25% and less than 50% of the plurality of source and drain strips.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long K. Tran whose telephone number is 571-272-1797. The examiner can normally be reached on Mon-Thu.


Art Unit: 2818

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Long Tran 

June 22, 2005


David Nelms
Supervisory Patent Examiner
Technology Center 2800